Chapter Two Review 1

1) Perform the following conversions: (9/2/08)

a) 0.000213 m =_____nm
b) 1.2 x 10^5 Mm = _____m
c) 32 mm = _____Mm
d) 1,560 μm =_____nm
e) 15 mm = _____km

2) List the number of significant figures for each measurement:

a) 5.40 g _____
b) 10,350 ml _____
c) 1.90 cg _____
d) 0.0000040 mm _____
e) 200.0 cm _____
f) 1 x 10^3 km _____

3) Perform the following operations and round to the appropriate number of significant figures:

a) 4.5 g + 3.64 g = _____
b) 30 N x 1.73 s = _____
c) 88 *ml* – 19.48 *ml* = _____
d) 56.01 kg x 0.006 m/s = _____
e) 9.81 m/s divided by 0.0005 m/s = _____
f) 76.3 g + 5.54 g + 0.4 g = _____

4) List the Absolute and Relative Error of each measurement:

a) r = 1.482 x 10^{11} m (the accepted value is 1.510 x 10^{11} m)
b) r = 6.41 x 10^6 m (the accepted value is 6.38 x 10^6 m)

5) Perform the following operations: use cal. value for π

a) Volume of the earth if its radius is 6.38 x 10^6 m? ($V = 4/3\pi r^3$)

b) Area of a circular track if its radius is 76 m? ($A = \pi r^2$)

c) Volume of a crate that is 1.85 m by 0.52 m x 0.31 m?

6) List the following measurements in Scientific Notation:

a) 95,500,000 miles _____
b) 0.000034 m _____
c) 1.01 mm _____
d) 96.81 m/s _____
e) 100 *ml* _____
f) 1.063 km _____

7) List the following measurements in scientific notation:

a) 6,000,000 m _____
b) 0.00021 m _____
c) 0.09 mm _____
d) 0.981 m/s _____
e) 20 *ml* _____
f) 16.3 km _____

8) Problems: a) Three young up-and-coming physics students measure a certain event to last 1.54 s, 1.47 s, and 1.50 s. Perform error analysis to find the absolute and relative error if the accepted value is 1.51 s.